generating data indicating a proportion of synthesis of the stored conversion data, corresponding to the second illuminating light;

generating a first conversion condition from the stored conversion data according to the data indicating the proportion of synthesis;

generating a second conversion condition based on color temperature information of the second illuminating light; and

converting data dependent on the first illuminating light into data dependent on the second illuminating light using the first conversion condition and the second conversion condition.

19. (Twice Amended) An image processing method according to Claim 1, further comprising a step of providing a preview image based on the converted data.

REMARKS

This application has been carefully reviewed in light of the Office Action dated November 1, 2002 (Paper No. 23). Claims 1, 3 to 9 and 19 are currently in the application, with Claims 2 and 20 to 23 having been canceled herein without prejudice or disclaimer of the subject matter contained therein. Claims 1, 8 and 9 are the independent claims. Reconsideration and further examination are respectfully requested.

The drawings were objected to under 37 C.F.R. § 1.84(p)(4) because Figure 8 uses reference numeral "61" to label both the image data converting unit and the color temperature converting unit. A Request For Approval Of Drawing Changes accompanies

this amendment in which it is proposed to change the reference numeral identifying the color temperature converting unit to "81".

Figures 24 and 25 were also objected to for not including reference signs and for allegedly not having a corresponding detailed description in the specification. The Request For Approval Of Drawing Changes also proposes to amend Figures 24 and 25 to include appropriate reference signs. In addition, the paragraphs beginning at page 49, line 3, and ending at page 49, line 12, in the specification, which are believed to provide sufficient description of Figure 24, and the paragraphs beginning at page 50, line 10, and ending at page 50, line 22, in the specification, which are believed to provide sufficient description of Figure 25, have been amended to contain corresponding references to the proposed new reference signs in Figures 24 and 25. Therefore, reconsideration and withdrawal of the objections to the drawings are respectfully requested.

Claims 1 to 9 and 19 to 23 were rejected under 35 U.S.C. § 112, first paragraph, for allegedly containing subject matter that was not described in the specification in such a way as to convey to one skilled in the art that Applicants had possession of the invention at the time of filing. With respect the Claims 1 to 9, the Office Action contended that the feature of generating a second conversion condition based on color temperature information of a second illuminating light has not been adequately described in the specification. As described beginning at page 15, line 17, of the specification, the input data are normalized to values under a high color rendering type of light source at a color temperature of 6500 degrees. Accordingly, values associated with the first illuminating light are fixed in this embodiment and it is unnecessary to input

information concerning the first illuminating light. Therefore, Applicants respectfully submit that the subsequent description in the specification beginning at page 18, line 21, in which color temperature information is obtained would be understood by those skilled in the art to describe color temperature information of the second illuminating light.

With respect to Claims 19 to 23, the Office Action has contended that the feature of providing a preview of a processing result of the generated conversion condition has not been adequately described in the specification. Claims 20 to 23 have been canceled without conceding the correctness of this rejection. Claim 19, on the other hand, has been amended to claim providing a preview image based on the converted data. As described beginning at page 17, line 24, of the specification, a mode is provided for displaying an image while setting a lighting characteristic coefficient and confirming the effect of the set coefficient. Therefore, Applicants respectfully submit that there is adequate description in the specification for providing a preview image based on converted data.

In view of the foregoing remarks, reconsideration and withdrawal of the § 112, first paragraph, rejection of Claims 1, 3 to 9 and 19 are respectfully requested.

Claims 1, 2, 8, 9, 19 and 21 to 23 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,446,476 (Kouzaki) in view of U.S. Patent No. 5,313,291 (Appel). Without conceding the correctness of this rejection, Applicants have canceled Claims 2 and 21 to 23, thereby rendering the rejection of these claims moot. With respect to the remaining claims, Applicants have carefully considered the Examiner's comments together with the applied references and respectfully submit that the remaining claims are patentably distinguishable over the applied references for at least the following reasons.

Independent Claims 1, 8 and 9 concern converting data dependent on a first illuminating light into data dependent on a second illuminating light. Conversion data for a light source having high color rendering properties and conversion data for a light source having low color rendering properties are stored and data indicating a proportion of synthesis of the stored conversion data are generated corresponding to the second illuminating light. A first conversion condition is generated from the stored conversion data according to the data indicating the proportion of synthesis and a second conversion condition is generated based on color temperature information of the second illuminating light. Data dependent on the first illuminating light is then converted into data dependent on the second illuminating light using the first and second conversion conditions.

The applied references are not understood to disclose or suggest the foregoing features of the present invention. In particular, the applied references are not understood to disclose or suggest at least the features of generating data indicating a proportion of synthesis of stored conversion data for a light source having high color rendering properties and stored conversion data for a light source having low color rendering properties, corresponding to a second illuminating light, and generating a conversion condition for converting data dependent on a first illuminating light to data dependent on a second illuminating light according the data indicating the proportion of synthesis.

Kouzaki concerns a color image forming apparatus in which copying conditions, such as light conditions, can be set to improve the appearance of a formed color image. However, as conceded in the Office Action , Kouzaki is not understood to disclose

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the feature generating data indicating a proportion of synthesis of conversion data for multiple light sources. Therefore, Kouzaki is not understood to disclose or even suggest at least the features of generating data indicating a proportion of synthesis of stored conversion data for a light source having high color rendering properties and stored conversion data for a light source having low color rendering properties, corresponding to a second illuminating light, and generating a conversion condition for converting data dependent on a first illuminating light to data dependent on a second illuminating light according the data indicating the proportion of synthesis.

Appel is not understood to disclose or suggest anything to remedy the foregoing deficiencies of Kouzaki. Appel concerns color correction in which color prints are matched to color images on a monitor, where a user can select lighting conditions having known spectra for optimizing the color matching. The matching performed in Appel is understood to utilize look-up tables generated from colorimetry results. These look-up tables are not understood, however, to be generated from conversion data for a light source having high color rendering properties and conversion data for a light source having low color rendering properties according to generated data indicating a proportion of synthesis of the conversion data. Therefore, Appel, either alone or in combination with Kouzaki, is not understood to disclose or even suggest at least the features of generating data indicating a proportion of synthesis of stored conversion data for a light source having high color rendering properties and stored conversion data for a light source having low color rendering properties, corresponding to a second illuminating light, and generating a conversion condition for converting data dependent on a first illuminating light to data

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dependent on a second illuminating light according the data indicating the proportion of synthesis.

Accordingly, independent Claims 1, 8 and 9 are believed to be allowable over the applied reference. Reconsideration and withdrawal of the § 103(a) rejection of Claims 1, 8 and 9 are respectfully requested.

The other claims in the application are dependent from the independent claims discussed above and are believed to be allowable over the applied reference. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing amendment and remarks, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa, California, office by telephone at (714) 540-8700. All correspondence should be directed to our address given below.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO THE
SPECIFICATION

Please amend the paragraph starting at page 17, line 15, as follows:

The setting mode 142 sets the value of the lighting characteristic coefficient according to the instruction of the user. According to the position of a black triangle mark on a bar, selected by the manual instruction of the user, the lighting characteristic coefficient instructing unit 64 calculates [an] and sets the value of the lighting characteristic coefficient. The black triangle mark positioned at the left-hand end of the bar sets 0 as IH_{ks} and [that] at the right-hand end sets 1. Also for setting the lighting characteristic coefficient while confirming the effect of the actually set lighting characteristic coefficient, there are provided a mode 143 for displaying the color patches in a user interface 145 and a mode 144 for displaying the original image in a user interface 146.

Please amend the paragraphs beginning at page 49, line 3, and ending at page 49, line 12, as follows.

In the following description there will be explained the operations in the execution of the user interface mode, with reference to Fig. [29] 24, which is a flow chart showing the operations in the execution of the user interface mode in the present embodiment.

Most of the [The] operations are basically the same as those of the fourth embodiment [4] depicted in Fig. 20. Specifically, steps S301 to S311, shown in Fig. 20, correspond with steps S2401 to S2403, S2405 to S2407 and S2409 to S2413, respectively, shown in Fig. 24, and therefore a description of these steps has been omitted. The operations depicted in Fig. 24 differ from those depicted in Fig. 20 with [, except for] the presence of a branched step in which the image conversion matrix is selected from the image conversion matrix storing unit 1113 and is set in the image conversion unit 1103 (Step S2408) if there is system external environment data (Step S2404).

Please amend the paragraphs beginning at page 50, line 10, and ending at page 50, line 22, as follows.

In contrast to the fifth embodiment [5] (depicted in Fig. 24) utilizing direct designation, operations of the system control unit 1111 of the present embodiment, depicted in Fig. 25, [is provided with] include a step of analyzing the input data of the user interface (step S2505), and[,] if the result obtained in such analysis is same as a mark attached to the previously prepared and stored image conversion matrix (step S2506), the previous matrix is selected without calculation of the matrix anew (step S2510).

In case the image conversion matrix is calculated anew in the present embodiment, the result of analysis of the user interface input data is displayed and stored in the image conversion matrix storing unit 1113 (step S2509).

The remaining steps depicted in Fig. 25, namely steps S2501 to S2504, S2507, S2508 and S2511 to S2515, correspond with steps S301 to S311, respectively, depicted in Fig. 20, and therefore a description of these steps has been omitted.

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Five Times Amended) An image processing method for converting data dependent on a first illuminating light into data dependent on a second illuminating light, comprising the steps of:

storing conversion data for [plural illuminating lights having different characteristics] a light source having high color rendering properties and conversion data for a light source having low color rendering properties;

[selecting two or more illuminating lights from the plural illuminating lights according to the second illuminating light;]

generating data indicating a proportion of synthesis of the stored conversion data [for the selected plural illuminating lights], corresponding to the second illuminating light;

generating a first conversion condition from the stored conversion data [for the selected plural illuminating lights] according to the data indicating the proportion of synthesis;

generating a second conversion condition based on color temperature information of the second illuminating light; and

converting data dependent on the first illuminating light into data dependent on the second illuminating light using the first conversion condition and the second conversion condition.

2. (Canceled)

8. (Five Times Amended) An image processing apparatus for converting data dependent on a first illuminating light into data dependent on a second illuminating light, comprising:

a data storing unit for storing conversion data for [plural illuminating lights having different characteristics] a light source having high color rendering properties and conversion data for a light source having low color rendering properties;

[a processor for selecting two or more illuminating lights from the plural illuminating lights according to the second illuminating light];

an instructing unit for generating data indicating a proportion of synthesis of the stored conversion data [for the selected plural illuminating lights], corresponding to the second illuminating light;

a first calculating unit for generating a first conversion condition from the stored conversion data [for the selected plural illuminating lights] according to the data indicating the proportion of synthesis;

a second calculating unit for generating a second conversion condition based on color temperature information of the second illuminating light; and

a converting unit for converting data dependent on the first illuminating light into data dependent on the second illuminating light using the first conversion condition and the second conversion condition.

9. (Five Times Amended) A computer readable recording medium storing a program for converting data dependent on a first illuminating light into data dependent on a second illuminating light, said program comprising the steps of:

storing conversion data for [plural illuminating lights having different characteristics] a light source having high color rendering properties and conversion data for a light source having low color rendering properties;

[selecting two or more illuminating lights from the plural illuminating lights according to the second illuminating light;]

generating data indicating a proportion of synthesis of the stored conversion data [for the selected plural illuminating lights], corresponding to the second illuminating light;

generating a first conversion condition from the stored conversion data [for the selected plural illuminating lights] according to the data indicating the proportion of synthesis;

generating a second conversion condition based on color temperature information of the second illuminating light; and

converting data dependent on the first illuminating light into data dependent on the second illuminating light using the first conversion condition and the second conversion condition.

19. (Twice Amended) An image processing method according to Claim 1, further [for converting data dependent on a first illuminating light into data dependent on a

second illuminating light,] comprising [the steps] a step of[:

storing conversion data for plural illuminating lights having different characteristics;

selecting two or more illuminating lights from the plural illuminating lights according to the second illuminating light;

generating data indicating a proportion of synthesis of conversion data for the selected plural illuminating lights, according to a manual instruction input by a user;

generating a conversion condition from the conversion data for the selected plural illuminating lights according to the data indicating the proportion of synthesis;

converting data dependent on the first illuminating light into data dependent on the second illuminating light, based on the conversion condition; and]

providing a preview image based on the converted data[of a processing result of the generated conversion condition].

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)